

Appl. No. 09/981,070
Amendment dated March 23, 2004
Reply to Office Action of February 26, 2004

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-74. (cancelled)

75. (currently amended) A device for carrying out enzymatic and/or molecular biological reactions requiring at least two different incubation temperatures, characterized in that it comprises:

- at least one cartridge having a plurality [[or]] of reaction chambers and a reservoir, said reaction chambers being connected to the reservoir via channels,
- at least one heating plate having at least two distinct zones that can be heated to at least two different temperatures;
- means for relative displacement between said cartridge and said plate, allowing a cyclic variation of the temperature of the reaction chambers.

76. (previously presented) The device of claim 75, in which the enzymatic reaction is a thermodependent chain amplification of nucleic acid sequences and in which the zones of the heating plate can be heated to at least two different temperatures, corresponding to phases in the nucleic acid amplification cycles.

77. (previously presented) The device of claim 76, wherein:

- primers specific for the target sequences to be amplified are predistributed in the reaction chambers;
- the reservoir is intended to receive a fluid composed of a sample of nucleic acids to be analysed and the reagents required for a polymerase chain amplification reaction with the exception of primers;
- the heating plate has three distinct zones that can be heated to three different temperatures corresponding to the three phases of polymerase chain reaction amplification cycles.

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78. (previously presented) The device of claim 76, for real-time thermodependent chain amplification of nucleic acid sequences, which comprises optical means for fluorescence excitation/measurement, disposed so as to excite and measure the fluorescence of the contents of the reaction chambers in each cycle.

79. (currently amended) The device of claim 76, in which the cartridge ~~is a cartridge according to claim 1~~ comprises a plurality of reaction chambers and at least one reservoir and having the following characteristics:

- each reaction chamber is connected to the reservoir via a channel having a cross section included in a circle with a diameter of less than 3 mm;
- the capacity of the reservoir is less than 10 ml;
- the disposition of the reaction chambers and the channels with respect to the reservoir allows a fluid to be homogeneously distributed into the reaction chambers from the reservoir.

80. (previously presented) The device of claim 76, in which the distinct zones for heating the plate are distributed into at least two or three disk portions.

81. (previously presented) The device of claim 76, in which said heating plate is fixed and said cartridge is moved by means of displacement means.

82. (previously presented) The device of claim 76, in which said cartridge is fixed and said heating plate is moved by means of displacement means.

83. (previously presented) The device of claim 76, in which said displacement means cause rotation of said cartridge and/or said heating plate.

84. (previously presented) The device of claim 76, in which the cartridge is in direct contact with the heating plate.

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85. (previously presented) The device of claim 76, in which the plate is provided with a coating encouraging relative displacement between said cartridge and said plate .
86. (previously presented) The device of claim 76, in which the heating plate comprises two or three distinct thermoblocks connected to means for programming their temperatures.
87. (previously presented) The device of claim 76, in which the bottom of the cartridge has a central projecting portion comprising a notch , and the displacement means include at least one driver co-operating with said notch to cause said cartridge to move in a rotary motion.
88. (previously presented) The device of claim 76, comprising optical means for fluorescence excitation/measurement disposed above or to the side of the cartridge.
89. (previously presented) The device of claim 76, further comprising means for supplying fluid present in the reservoir to the reaction chambers .
90. (previously presented) The device of claim 89, in which said supply means include a piston device , and the fluid is supplied to the reaction chambers by increasing the pressure.
91. (previously presented) The device of claim 89, in which said supply means include a pump and the fluid is supplied to the reaction chambers by reestablishing the pressure after establishing an underpressure.
92. (previously presented) The device of claim 91, in which the reaction chambers of the cartridge are closed.
- 93-97. (cancelled) A process for amplifying a nucleic acid using a device according to claim 76, comprising the following steps: